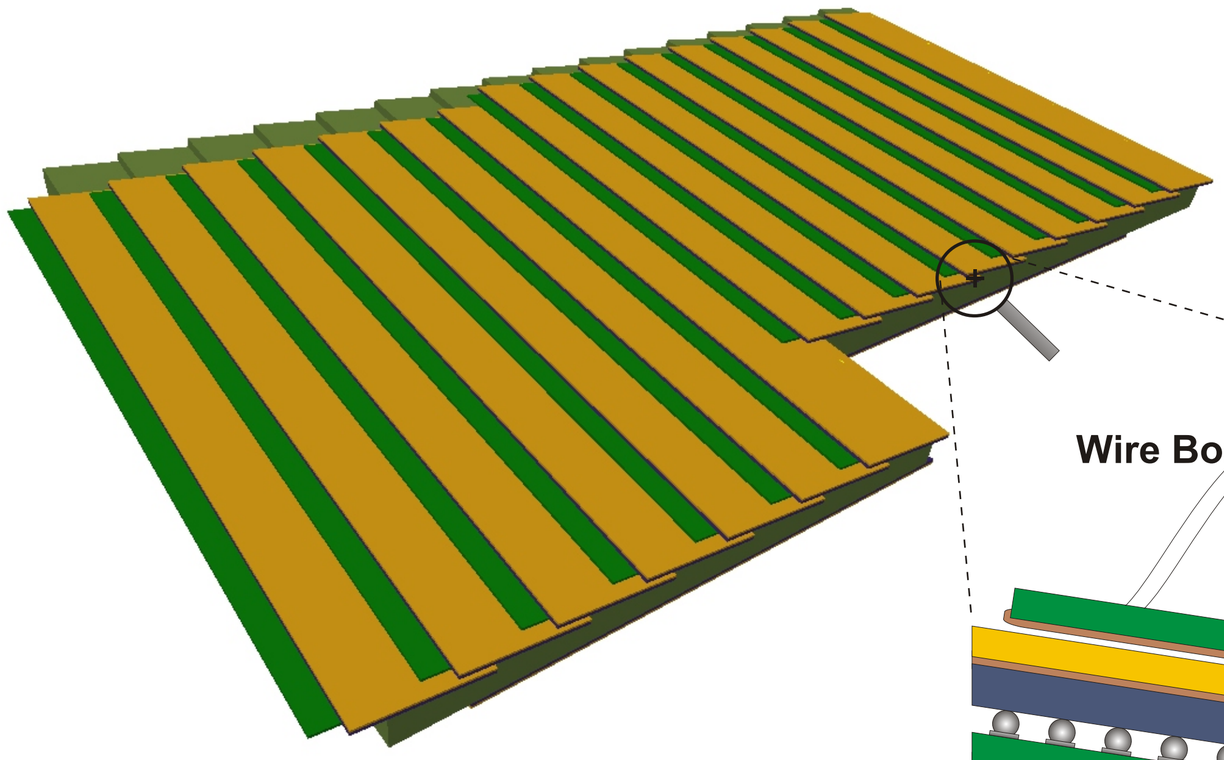
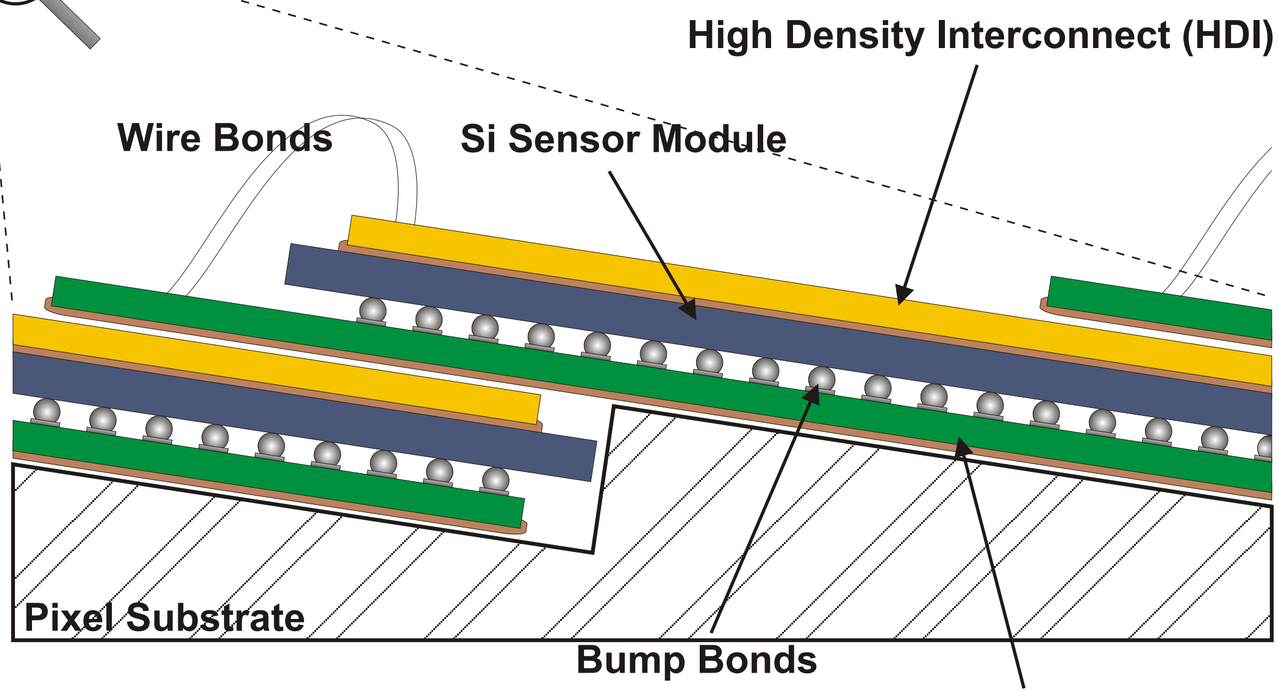
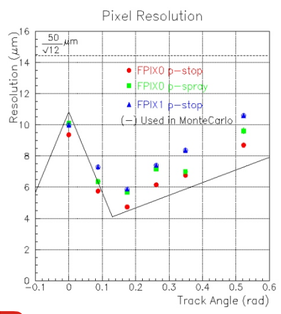
BTeV Pixel Detector R&D



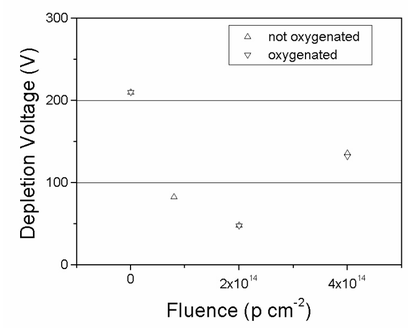
Pixel Detector Half Plane



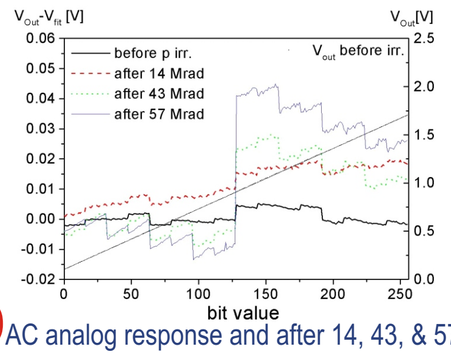
Performance



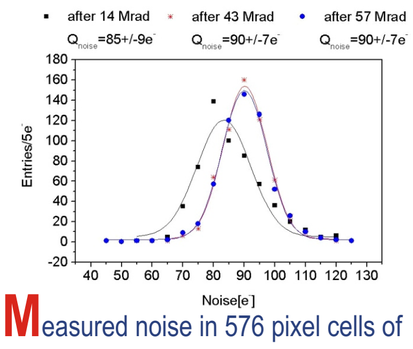
Pixel detector resolution as a function of incident track angle.



Full depletion voltage vs. fluences of proton irradiation for normal and oxygenated sensors.

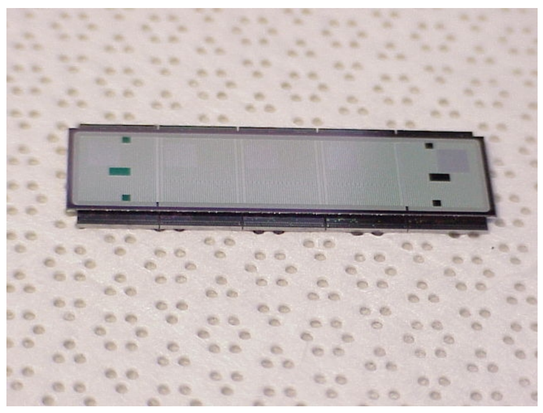


DAC analog response and after 14, 43, & 57 Mrad total dose exposure to 200 MeV protons.

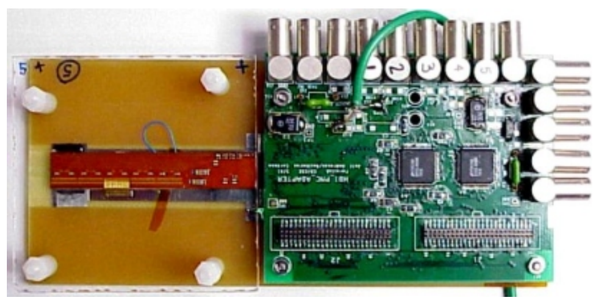


Measured noise in 576 pixel cells of preFPIX2Tb chip after 14, 43, & 57 Mrad proton irradiation.

Multichip Modules

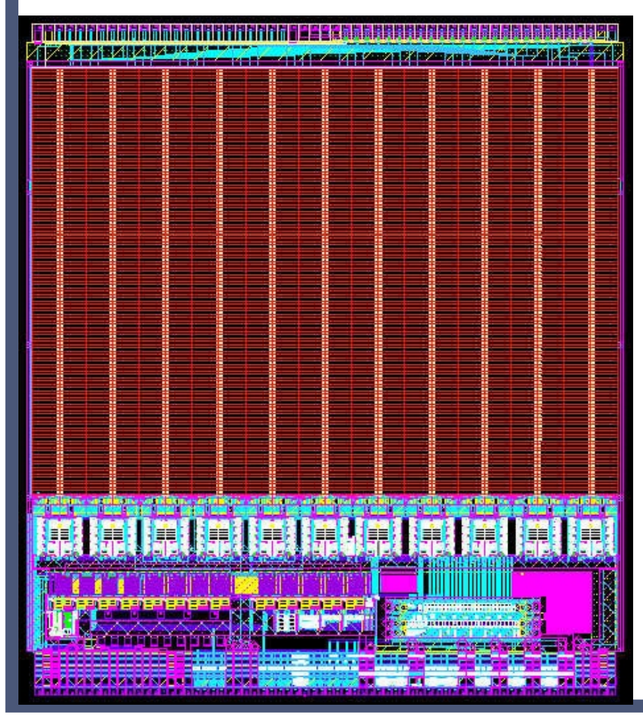


Multichip sensor bump-bonded to 5 FPIX1 read-out chips.



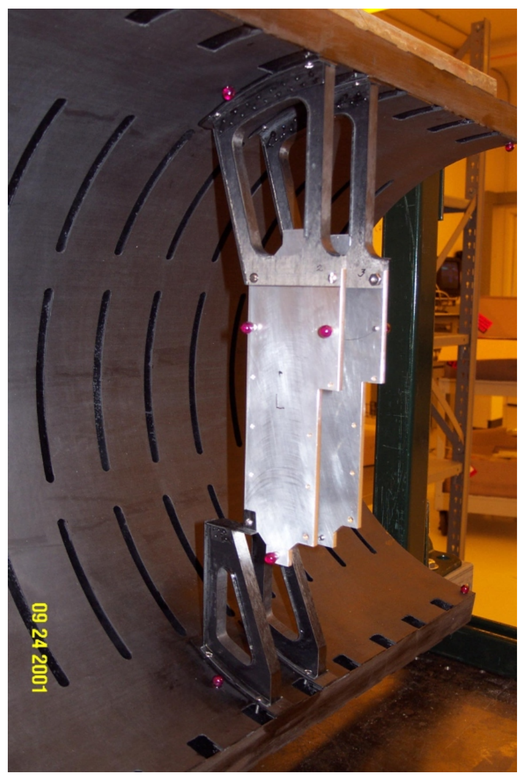
Multichip module with 1 read-out chip bump-bonded to single sensor and wire-bonded to HDI undergoing characterization tests.

FPIX2 ReadOut



Layout of the new FPIX2 pixel read-out chip for BTeV to be submitted soon using a 0.25 micron CMOS process observing radiation tolerant design rules .

Mechanical Support



Carbon fiber cylindrical support shell and mounting brackets for the pixel substrates (Al dummy version shown here) undergoing mechanical stress tests.